(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property **Organization**

International Bureau



(43) International Publication Date 15 July 2004 (15.07.2004)

PCT

(10) International Publication Number WO 2004/058636 A1

(51) International Patent Classification7: B01J 19/24

C01B 7/03,

(21) International Application Number:

PCT/US2003/040327

(22) International Filing Date:

12 December 2003 (12.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/433,686

16 December 2002 (16.12.2002)

(71) Applicants (for all designated States except US): E.I. DU PONT DE NEMOURS AND COMPANY [US/US]; 1007 Market Street, Wilmington, DE 19898 (US). BULLER, Thomas, Joseph [US/US]; 204 Delaney Circle, Dickson, TN 37055 (US).__

(72) Inventors; and

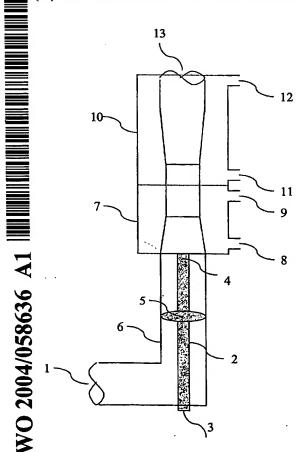
(75) Inventors/Applicants (for US only): BECKER, Aaron, J. [USAUS]; 1218 Evergreen Road, Wilmington, DE 19803 (US), DE LA VEAUX, Stephen, Claude [DE/US]; 102 Blue Rock Road, Wilmington, DE 19809 (US). DIEMER, Russell, Bertrum, Jr. [US/US]; 6 Matson Court, Wilmington, DE 19803 (US). DUNSON, James, R., Jr. [US/US]; 202 Winslow Road, Newark, DE 19711 (US/LYKE, Stephen, Erwin [US/US]; 3516 Hopkins Drive, Wilmington, DE 19808 (US) TILTON, James, N. [US/US]; 8 Berkshire Road, Landenberg, PA 19350 (US). ZIMMERMAN, David, A. [US/US]; 15 Pheasants Ridge North, Wilmington, DE 19807 (US).

(74) Agent: SINNOTT, Jessica, M.; E.I. DUPONT DE NEMOURS AND COMPANY, PATENT RECORDS CENTER, 4417 Lancaster Pike, Wilmington, DE 19805 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

[Continued on next page]

(54) Title: PROCESS AND TUBULAR FOR RECOVERY OF CHLORINE FROM IRON CHLORIDES



(57) Abstract: The present invention relates to a process for recovering chlorine from a feed stream containing metal chlorides using a tubular reactor wherein a hot oxygen containing gas has an initial velocity such that the resulting velocity of the bulk gas formed from mixing the oxygen containing gas with the metal chloride feed stream and a scrubs feed stream is sufficient to remove wall deposits as fast as such deposits are formed.

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,

SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.